Implementing Complete Streets: "The Road Diet"

Ed McKinney, AICP
Senior Associate, Glatting Jackson
How do we implement “complete streets” on our existing roads?

Many Roads Could Use a “road diet”
“Trying to cure traffic congestion with more capacity is like trying to cure obesity by loosening your belt”

- Glen Heimstra, Futurist
AND YET TRAFFIC STILL SEEMS NOT TO BE MOVING.
WITH CANADA AND MEXICO WE COULD ADD A FEW MORE LANES IN EACH DIRECTION.

NOW WHERE WAS IT WE WERE GOING?
CAPACITY OF STREETS
What’s a road diet?

Classic road diet shrinks 4 lanes to 3 + bike lanes
What's a road diet?

Classic road diet shrinks 4 lanes to 3 + bike lanes
What’s a road diet?

- Reduces speed
- Reduces accidents (left turns)
- Center lane provides a clear & safe left turn lane (which can be landscaped)
- Works on moderate volume streets (10-20,000 ADT)
- Allows for other modes (bike lanes, wider sidewalks, etc.)
- Numerous successful examples around the country

Inexpensive way to retrofit existing street
Four Lane Roads – Obsolete
- High Turning Volumes
- Safety
Three Lane Roads – Current Practice
- High Turning Volumes
- Safety
Cascade Avenue
Road Diet
Cascade Avenue: Existing 4-Lane Street

Cascade Avenue: 13,500 – 17,900 AADT
Cascade Avenue: Community Planning Process
Cascade Avenue: Existing 4-Lane Street
Cascade Avenue: Road Diet Concept
Cascade Avenue: Road Diet Concept

- Reduces speed
- Reduces accidents (left turns)
- Center lane provides a clear & safe left turn lane (which can be landscaped)
- Works on moderate volume streets (10-20,000 ADT)
- Allows for other modes (bike lanes, wider sidewalks, etc.)
- Numerous successful examples around the country
Comparable: Virginia Highlands – North Highland Avenue

North Highland: 17,000 AADT (2003 actual count)
Cascade Avenue: 13,500 – 17,900 AADT

Cascade: 3-Lane Concept & Redevelopment
Cascade: 3-Lane Concept & Redevelopment
Road Diet Case Study

Before/After
Case Study: Edgewater Drive, Orlando FL

- Existing 4-Lane Road w/on-street parking
- Neighborhood Commercial Street
- Average Daily Traffic: +/- 20,000
- Neighborhood Planning Process identified need to make street more pedestrian and bike friendly
- Converted to 3-Lane w/bike lanes & on-street parking (2002)
Case Study: Edgewater Drive - Speed

Edgewater Dr - Speeding Analysis

<table>
<thead>
<tr>
<th>Percent of Vehicles Traveling over 36 MPH</th>
<th>Before North End</th>
<th>After North End</th>
<th>Before Middle</th>
<th>After Middle</th>
<th>Before South End</th>
<th>After South End</th>
</tr>
</thead>
<tbody>
<tr>
<td>Before</td>
<td>15.7%</td>
<td>7.5%</td>
<td>9.8%</td>
<td>8.9%</td>
<td></td>
<td></td>
</tr>
<tr>
<td>After</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Source: City of Orlando Transportation Planning Bureau
## Crash & Injury Rate Comparison

<table>
<thead>
<tr>
<th>Statistic</th>
<th>Before(^1)</th>
<th>After(^2)</th>
<th>% Change</th>
</tr>
</thead>
<tbody>
<tr>
<td>Crash Rate (per MVM)(^3)</td>
<td>12.6</td>
<td>8.4</td>
<td>-34%</td>
</tr>
<tr>
<td>Injury Rate (per MVM)</td>
<td>3.6</td>
<td>1.2</td>
<td>-68%</td>
</tr>
</tbody>
</table>

Notes:
2. After represents four months (annualized)
3. MVM = Million Vehicle Miles

Source: City of Orlando Transportation Planning Bureau
Case Study: Edgewater Drive – **On-Street Parking Utilization**

![Graph showing on-street parking utilization before and after](chart.png)

Source: City of Orlando Transportation Planning Bureau
### Pedestrian Count Summary

<table>
<thead>
<tr>
<th>Direction</th>
<th>Before</th>
<th>After</th>
<th>Change</th>
<th>% Change</th>
</tr>
</thead>
<tbody>
<tr>
<td>Northbound &amp; Southbound</td>
<td>1,398</td>
<td>1,481</td>
<td>83</td>
<td>6%</td>
</tr>
<tr>
<td>Eastbound &amp; Westbound</td>
<td>738</td>
<td>1,151</td>
<td>413</td>
<td>56%</td>
</tr>
<tr>
<td><strong>Total</strong></td>
<td>2,136</td>
<td>2,632</td>
<td>496</td>
<td>23%</td>
</tr>
</tbody>
</table>

### Bicycle Count Summary

<table>
<thead>
<tr>
<th>Direction</th>
<th>Before</th>
<th>After</th>
<th>Change</th>
<th>% Change</th>
</tr>
</thead>
<tbody>
<tr>
<td>Northbound &amp; Southbound</td>
<td>295</td>
<td>368</td>
<td>73</td>
<td>25%</td>
</tr>
<tr>
<td>Eastbound &amp; Westbound</td>
<td>80</td>
<td>118</td>
<td>38</td>
<td>48%</td>
</tr>
<tr>
<td><strong>Total</strong></td>
<td>375</td>
<td>486</td>
<td>111</td>
<td>30%</td>
</tr>
</tbody>
</table>

Source: City of Orlando Transportation Planning Bureau
Case Study: Edgewater Drive – Vehicular Travel Time

Average Peak Period Travel Time (Minutes)
Edgewater Dr - Dartmouth St. to Maury Rd.

<table>
<thead>
<tr>
<th>Direction</th>
<th>AM (7:00 - 9:00)</th>
<th>PM (4:00 - 6:00)</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Before</td>
<td>After</td>
</tr>
<tr>
<td>Northbound</td>
<td>3.3</td>
<td>4.2</td>
</tr>
<tr>
<td>Southbound</td>
<td>3.2</td>
<td>4.1</td>
</tr>
</tbody>
</table>
Complete Streets & Land Development
Evolution of a Commercial Strip: Existing Conditions

- Transit Service Ineffective (buildings too far from street, results long walks and inefficient routing)
- Development lacks public space or amenity (park/plaza)
- Pedestrian Hostile Public Streets
- Pedestrians Discouraged From Walking to Adjacent Businesses
- Over Sized Parking Lots Separate Commercial Buildings From Streets
- Sidewalks do not connect to Buildings
Evolution of a Commercial Strip: Initial Street Oriented Development

Private Development Accepts the Invitation and Builds to the Street

Windows and doors are located along the street frontage to make building “front” the street.
New Development Continues to build to the street

Public/Private Park Improvements Create a Valuable Amenity

• Shared “Park Once” Environment is Created

Density and Location of Buildings Support Public Transit

Evolution of a Commercial Strip: New Public Square and Continued Street Oriented Development
Building & Street Relationship
Bringing It All Together

Start with a stark, plain street
Narrow travel lanes, add a bike lane
Bringing It All Together

Add a median, trees and some texture
Bring the buildings in closer
Make sure the buildings face the street
Bring in more buildings (infill)
The street now has a life!

Bringing It All Together